REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. In the present amendment, claims 1, 33, and 94 have been amended, claims 8 and 9 have been cancelled, and claims 95-120 have been added. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. Thus, claims 1-6, 10-12, 33-34, and 94-120 are pending in the application. Support for new claims 95 and 96 can be found in original claims 1 and 33, respectively. Support for new claims 97-120 can be found in original claims 2-6 and 10-12.

Claims Rejections - 35 USC § 112

Applicants would like to thank Examiner Yu for withdrawing the rejections under 35 U.S.C. § 112, first paragraph in the advisory dated April 28, 2008.

Claims Rejections - 35 USC § 103

Claims 1-6, 8-12, 33-34, 94 stand rejected under 35 U.S.C. § 103 over various combinations of West et al. (US 6,699,724), Renn et al. (US 3,875,044), (US 6,180,415), and Mirkin et al. (US 2003/0211488). Applicants respectfully traverse these rejections.

Claims 1 and 33 have been amended to remove the feature of the nanoparticles being COINs. Additionally, claims 1 and 33 have been amended to include the features: "a gel matrix comprising an electrophoresis gel" and "the gel matrix is thick enough to perform electrophoresis." Support for these features can be found, for example, in paragraph [0035] of the specification.

If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivations to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Further, when analyzing rational underpinnings to support the legal conclusion of obviousness, teachings away must be considered. *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350, slip op. at 10 (U.S. April 30,

2007)(U.S. April 30, 2007)("when the prior art prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious."). *Id.* An electrophoresis gel is not just any ordinary gel. To perform electrophoresis, the gel requires a sufficient thickness, typically between 1 and 2 mm (see e.g., Renn, col.1, l.25-27). Fluid containing various species to be **separated** is contacted to one end of the gel and an electric potential is applied across the gel. The various species in solution flow **through** the gel, **separating** from each other based on size and charge (see attached Wikipedia explanation of electrophoresis). the volume of fluid flowing through the electrophoresis gel is a function the size of the cross-section of the gel. The gel of West, in contrast to the claimed electrophoresis gel, is only used as a support (col.3, l.48-51) and to prevent migration of the nanoshells (col.12, l.56-59). Indeed, to make the sensor illustrated in Fig. 7 of West, the hydrogels are "formed in thin coatings (2-100 μm)." (West, col.13, l.9-10). The sensor of West operates by attaching antibodies to the embedded nanoshells and then the "bioconjugated nanoshells are then added to a fluid sample containing the analyte, forming antibody-target protein complexes" (col.15, l.14-16). That is, fluid is placed **on** the hydrogel of West and the targets attach to nanoshells in the hydrogel. West does not teach electrophoresis. Simply, the gels of West are not electrophoresis gels as they are structurally different (substantially thinner) and functionally different (to hold the nanoshells in place without interfering with attachment of targets to the nanoshells rather than electrophoresis **through** the gel) from the electrophoresis gels recited in dependent claims 1 and 33.

While Renn does teach the use of electrophoresis gels for electrophoresis, the combination of West and Renn would render West unsatisfactory for its intended purpose. As discussed above, West teaches the use of a very thin gel layer to support his nanoshells. The sensor illustrated in Figure 7 of West operates by adding the gel to a fluid sample and having the target attach to the nanoshells. West requires the use of a thin gel having thickness on the order of 2-100 μm so that the targets can easily attach to the nanoshells. The use of a thick gel having a thickness between 1 and 2 mm as taught by Renn in the sensor of West would have made no sense to those of ordinary skill in the art as large numbers of deeply embedded nanoshells would be wasted – having no target molecules attached. Indeed, West teaches away from using thick gels:

> PEGDA hydrogels can be formed into thin coatings (2-100 μm) via a process called interfacial polymerization (Hill-West, J. L. et al. Natl. Acad Sci. USA 91:5967-5971 (1994)). This allows the creation of very thin, nanoshell-containing hydrogels subcutaneously in situ via an entirely injectable system. (Col.13, l.9-14).

That is, West explicitly teaches the use of "very thin, nanoshell-containing hydrogels." (West, c.13, l.12-13). Thus, one of ordinary skill in the art would not have combined West and Renn to make the claimed invention. Further, none of the other applied references cure this defect. Applicants submit that the claims are in a condition for allowance and respectfully request withdrawal of the rejections.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: May 29, 2008

Respectfully submitted,

By /Martin Sulsky/
Martin Sulsky
Registration No.: 45,403
DARBY & DARBY P.C.
P.O. Box 770
Church Street Station
New York, New York 10008-0770
(212) 527-7700
(212) 527-7701 (Fax)
Attorneys/Agents For Applicant